



Cold In-Place Recycling in Tampa



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**Federal Highway
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City of Tampa Stats

- Tampa has 2,600 lane miles of roadways
- Tampa uses the MicroPAVER system
- Currently the City of Tampa's average PCI is 45
- At current funding levels Tampa's paving cycle is 42 years
- Tampa has an In-House Resurfacing Crew for Conventional Paving
- The City recognizes the need to use alternative processes to meet these challenges
 - Reclamite
 - Micro-Surfacing
 - Hot In-Place Recycling
 - Central Plant Recycling
 - Cold In-Place Recycling



ASCE Report Card shows more failing grades

- Currently the U.S. infrastructure's overall GPA = D
- Driving on roads in need of repair costs Florida motorists \$1.1 Billion a year in vehicle repairs, \$82/person.
- Congestion costs Americans \$63.2 Billion per year. On average, Americans spend 3.5 billion hours a year in traffic.
 - Tampa \$742/per year
 - Tampa's Average PCI is 45, or an F!



Maintaining the City of Tampa streets involves maintenance activities in a Pavement Management approach. We take care of roads in good, fair and poor condition to better stretch the dollars available.



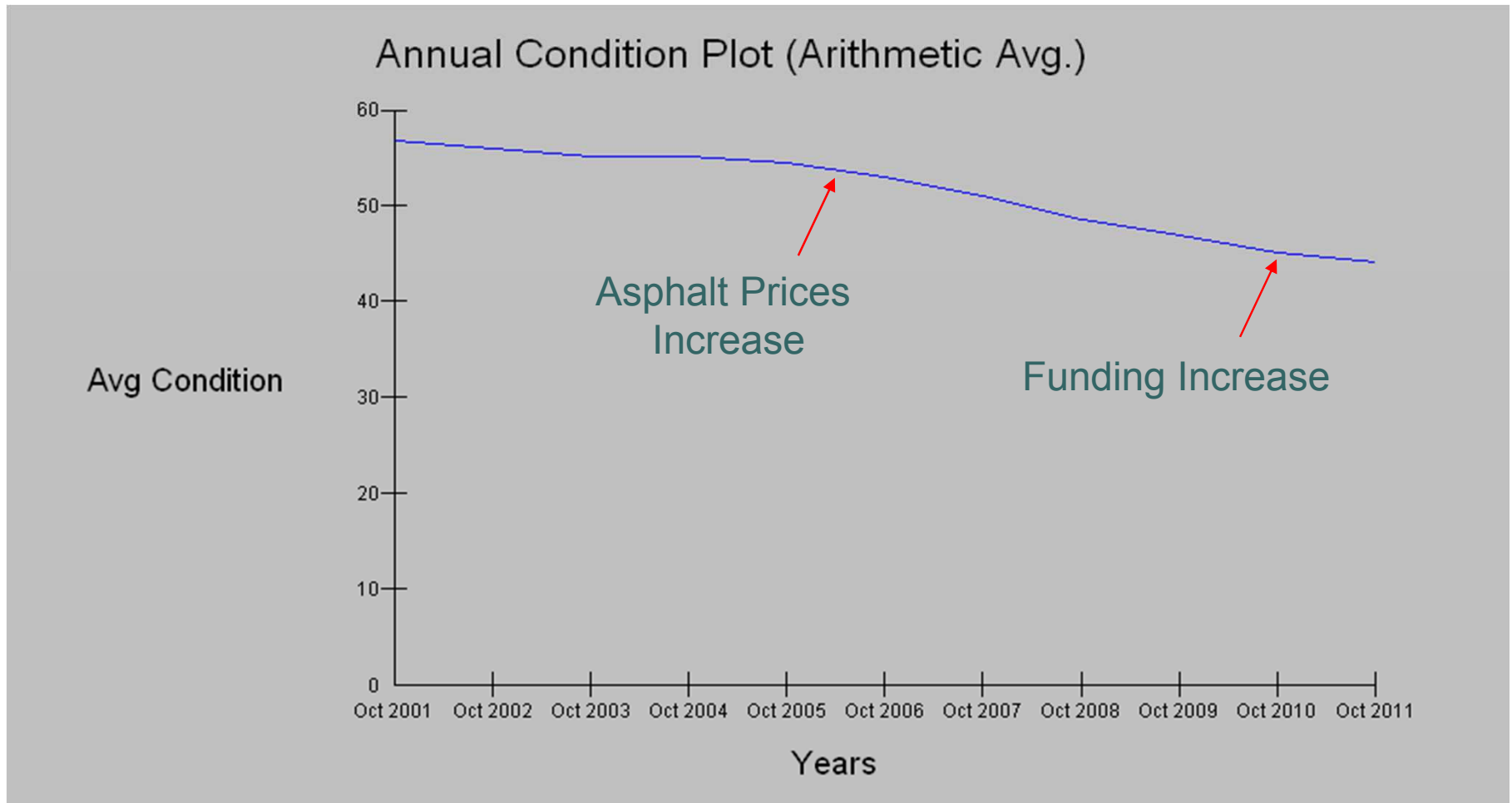


Budget???



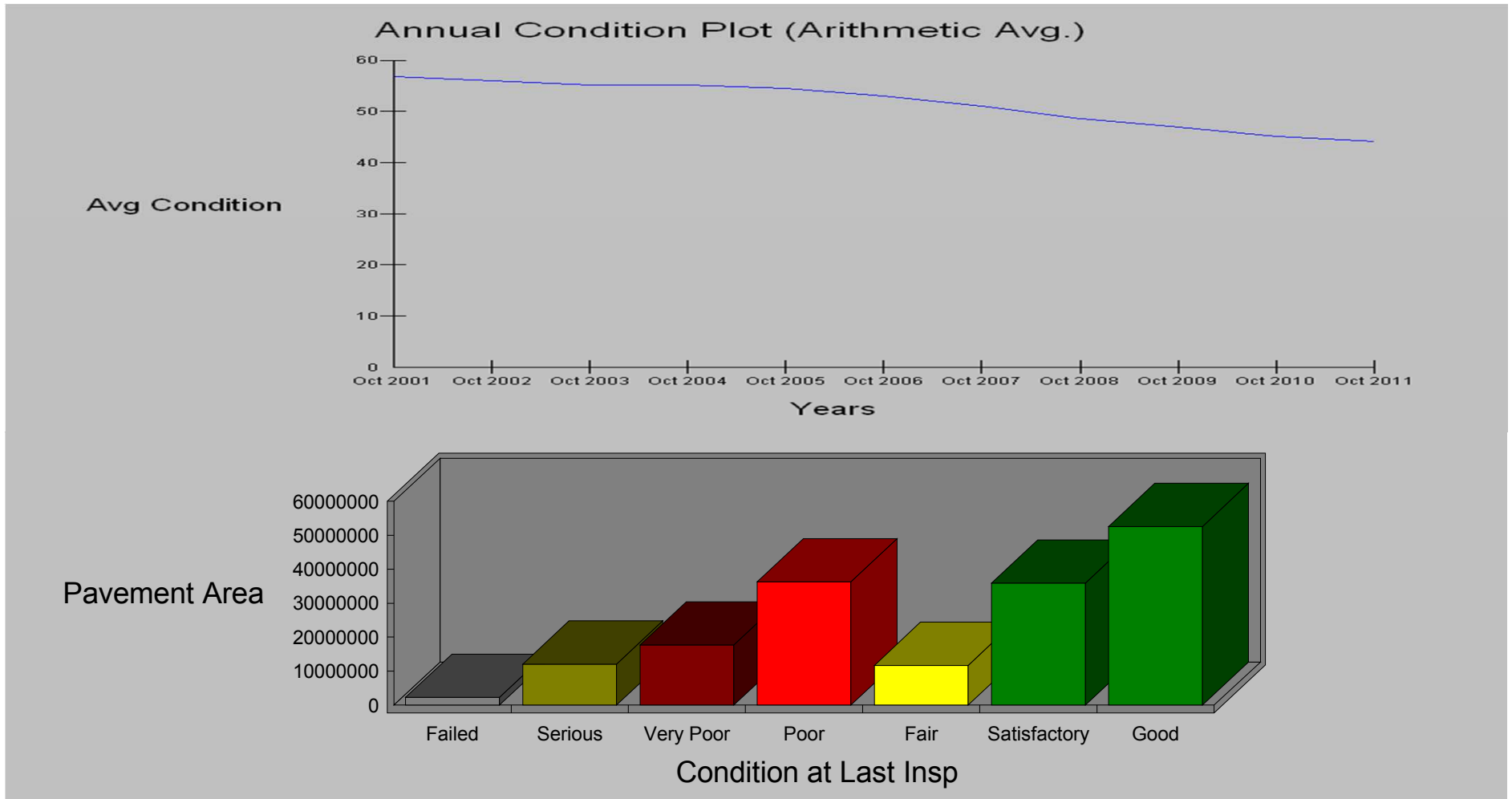


FY 2001 Through FY 2011



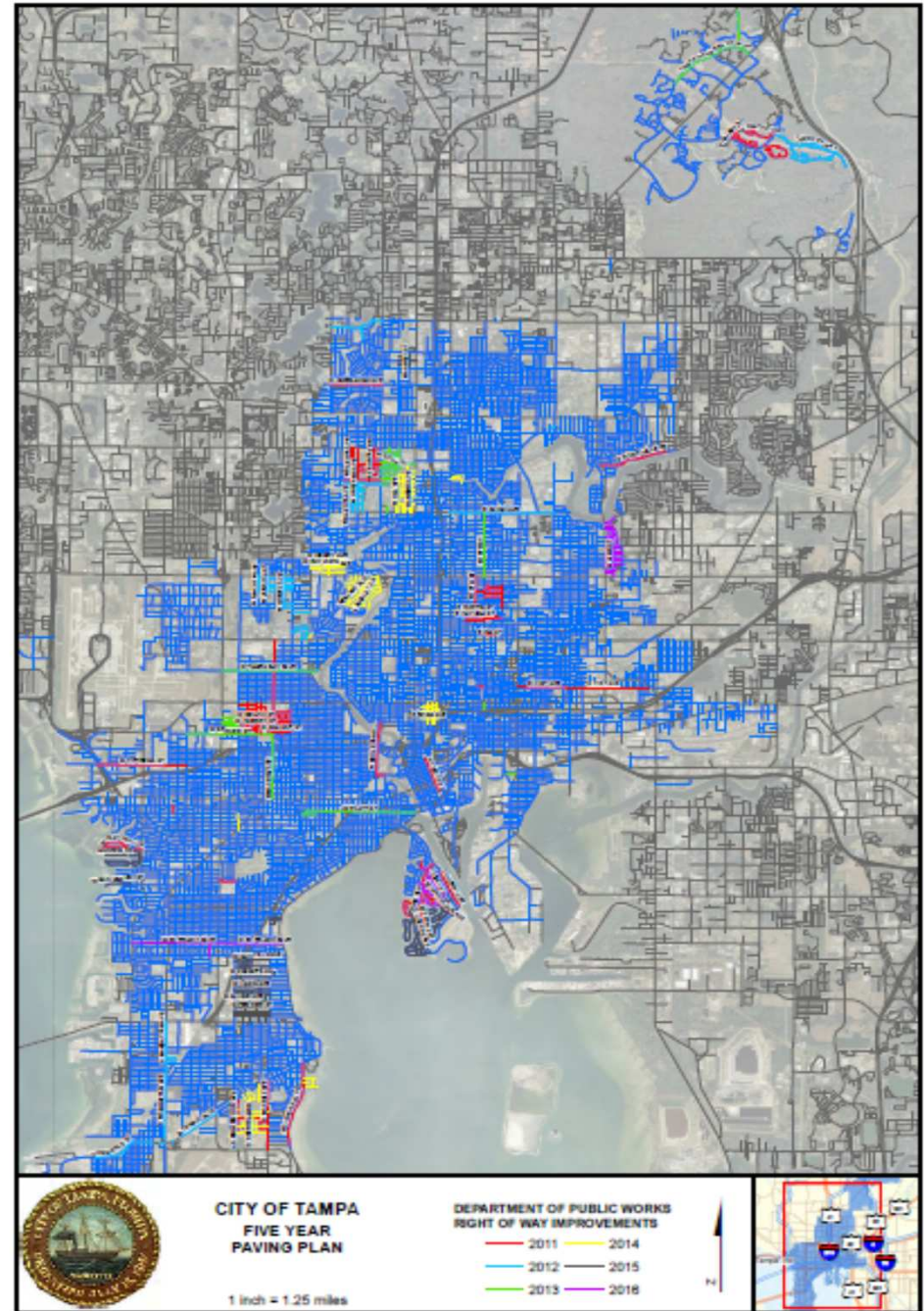


FY 2001 Through FY 2011





5-Year Plan





Tampa's CIR Selection Process

- Tampa uses the MicroPAVER PMS to identify potential candidates for CIR
- With a PCI Average of 45, many of our roads are candidates!
- Perform a visual inspection of the identified sections
- Utilize in-house staff to formulate and design the projects





CIR Candidate

Our most common distresses:

- Alligator Cracking
- Pot holes
- Poor ride quality
- Oxidation



South Lois, Tampa 2007





CIR Candidate

- Transverse and Longitudinal cracking
- Rutting
- Oxidized, raveled pavement
- Some structural deficiencies
- UGLY!!!



Independence Parkway, Tampa 2003





Tampa's CIR Selection Process

- Pass on limits of work to CIR Contractor
- Schedule coring of roadway to determine asphalt thickness and base type
- Make a final determination on whether the roadway is a CIR Candidate



Tampa's CIR Design Process

- The City also works collaboratively with the CIR Contractor and the independent AMRL accredited laboratory
- PRI Asphalt Technology performs the CIR mix design for our CIR Contractor (E.J. Breneman, L.P.)
- At the pre-construction meeting we review the mix design and project scope for each road



● ● ● | The anatomy of a CIR project

Independence Parkway 2003

- Project was a City/Contractor Partnership
- Project was 23,000 square yards
- Average hot mix depth was 3 ¼ inches
- Average soil cement depth was 10 ½ inches
- Traffic levels reached over 1,000 cars an hour during peak times, 20,000 ADT
- Project called for lowering the road at least 2 inches for HMA surface course





Independence Parkway Before



● ● ● | One of the first steps is to core the roadway



- ● ●

Often times, the cracking network penetrates the full depth of the mix





Recycled pavement being placed into the paver





Quick return to traffic after compaction

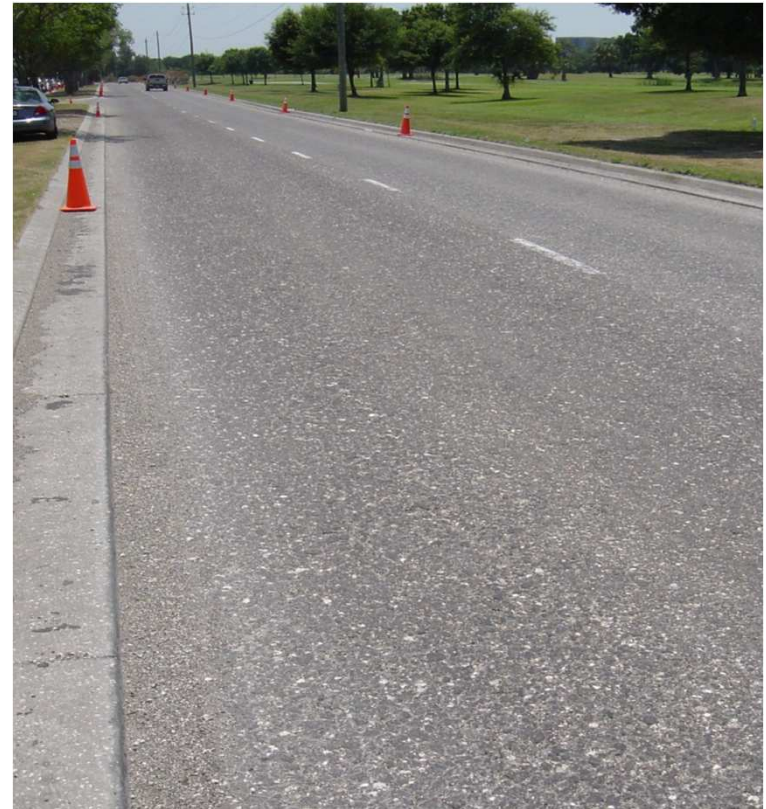


Independence Parkway, Tampa 2003






With the cracking network gone
the CIR is ready for traffic, then HMA
overlay



Independence Parkway, Tampa 2003





**Approximately one year after
completion**



Approximately 8 years after
completion

Economic & Environmental Benefits to Tampa

- ❖ Asphalt can be recycled 100%
- ❖ In some cases provides a base for the first time
- ❖ Recycling stops depletion of natural resources
- ❖ Recycling offers significant energy savings
- ❖ Stretches roadway funding
- ❖ It is a less disruptive alternative to conventional methods
- ❖ Roadway remains open during construction
- ❖ Recycling saves time



Cost Effectiveness of the CIR Process

- The CIR warranty is 36 months
 - Fatigue Cracking: Replace any 500' section that has a fatigue cracking rating exceeding low severity for more than 10%
 - Rutting: Limit rutting of a ½ inch depth ½ the length of any 500' segment
 - Potholes: Repair any potholes over 9 square feet in surface area or any 500' lane segment over 5% surface area



Challenges faced dealing with Decision Makers

- ▶ Tampa Administration trusts our Pavement Management Staff and supports decisions.
 - Educating Management on importance of consistent, dedicated funding source
 - Importance on the proper amount of funding
 - Pavement Management Staff needs to do a better job of salesmanship





Thank you